ABSTRACT

A system for providing a first signal to a flip circuit and receiving a second signal from the flip circuit over an electrical path adapted for use with a keypad having a keypad lighting circuit. The system includes a first circuit for providing the first signal to the flip circuit via a first electrical path, the first signal having alternating first and second states. A second circuit generates a second signal. A third circuit receives the second signal via the first electrical path. The second signal is received during the second state of the first signal. In a more specific embodiment, the first and second states are continuously alternating states. The first signal provides power to the flip circuit when the first signal is in the first state. The first circuit further includes a signal generator for adjusting a duty cycle of the first signal. The signal generator includes a voltage source, a switching circuit connected to the voltage source, and a control circuit connected to the switching circuit. The control circuit causes the switching circuit to output the first signal having first and second states at the duty cycle. The switching circuit includes a transistor having a control terminal connected to the control circuit. One terminal is connected to the voltage source and another terminal is connected to the electrical path. The second circuit includes a keypad. The flip circuit includes at least one light source to illuminate the keypad. The light source is powered by the first signal during the first state thereof. The second signal is generated by the keypad during the second state of the first signal. The keypad includes a plurality of resistive elements connected in a resistive ladder network. Each resistive element corresponds to a respective key of the keypad. A computer processes the second signal to ascertain which key is depressed.